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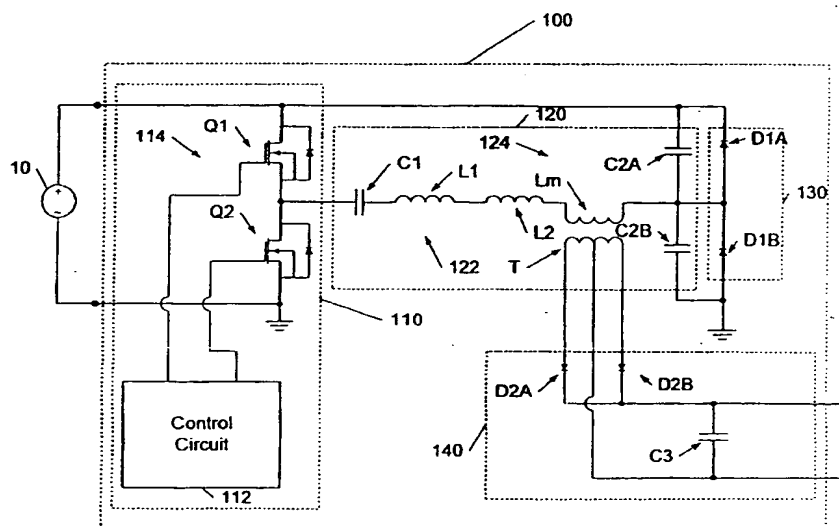
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(54) Title: MULTI-RESONANT DC-DC CONVERTER



(57) **Abstract:** A power converter apparatus (100) comprising a multi-resonant circuit (120) comprising a series-resonant circuit (122) and a frequency-dependent impedance (124) connected in series with the series-resonant circuit (122) and operative to counteract an inductance of the series-resonant circuit (120), a switching circuit (110) operative to alternately apply first and second voltages to an input of the multi-resonant circuit (120), and a rectifier circuit (130) coupled to an output of the multi-resonant circuit (120). The invention also provides A power conversion method, comprising alternatively applying first and second voltages to an input of a multi-resonant circuit (120) comprising a series-resonant circuit (122) and a frequency-dependant impedance (124) connected in series with the series-resonant circuit (122) and operative to counteract an inductance of the series-resonant circuit (122); and responsively generating a DC voltage from a voltage at the output of the multi-resonant circuit (120).